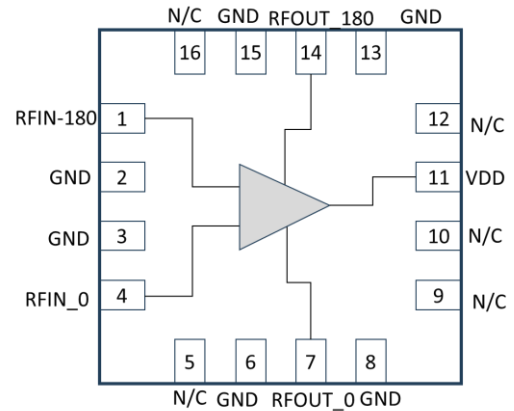


Features:

- RF Frequency: DC-12 GHz
- Small signal gain: 7.8 dB
- Output P1dB: 5.13 dBm
- Saturated Output Power: 5.13 dBm
- DC drain bias voltage: 5 V
- Dc supply current: 135 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 0.65 mm * 1.45 mm

Functional Block Diagram



Description:

RFDFA12 is Differential Amplifier operates from DC-12 GHz and it is used designed to amplify the difference between two input signals while rejecting common-mode noise or interference present in both inputs. The amplifier provides 7.8 dB of small signal gain, the input and output are matched to 50 ohms.

The device is specifically designed for use in DC-12 GHz frequency in Audio system, Medical Instrumentation, Automotive system and Industrial Control system Application.

The Technology used to design DFA is 0.1um GaAs pHEMT Process.

Pin Configuration

Pin No.	Pin Name	Description
5,9,10,12,16	N/C	Not Connected
2,3,6,8,13,15	GND	Ground
11	VDD	Drain Bias Voltage
1	RFIN_180	RF Input_180
4	RFIN_0	RF Input_0
14	RFOUT_180	RF Output_180
7	RFOUT_0	RF Output_0

Applications:

- Audio system.
- Medical Instrumentation.
- Automotive system.
- Industrial Control system.

Deliverables:

- Sample Ready Packaged Die
- Test Results
- Product Datasheet

Electrical Specification:

Freq= DC-12 GHz, VDD = 5V, ID= 135 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	100 MHz	dB	13.2
	6 GHz		7.8
	12 GHz		6
Output P1 dB	DC	dBm	
	6 GHz		5.13
	12 GHz		
Input Return Loss	DC	dB	0.018
	6 GHz		2.8
	12 GHz		0.4
Output Return Loss	DC	dB	11.9
	6GHz		13
	12 GHz		13.8
Operating Bias Conditions			
Drain Current (Id)	-	mA	135
Drain Voltage (VDD)	-	V	5

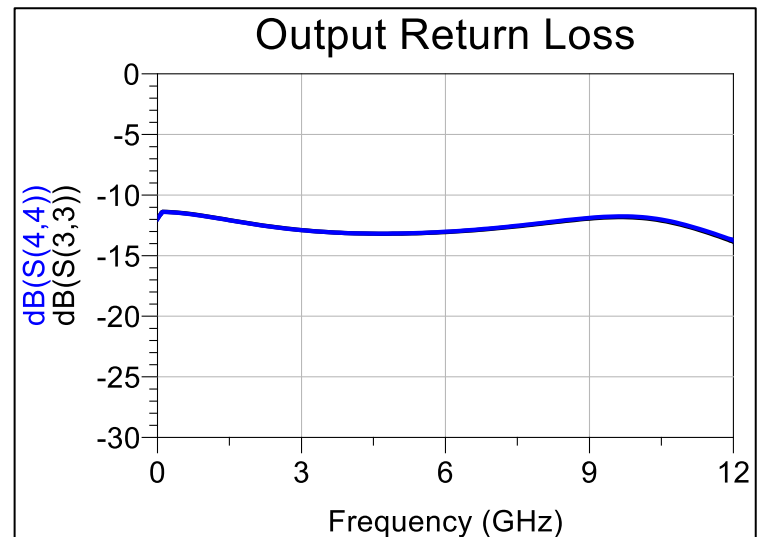
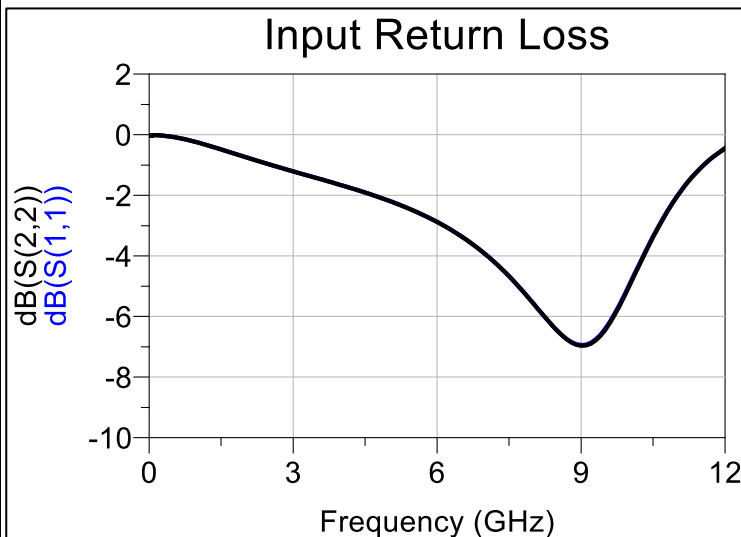
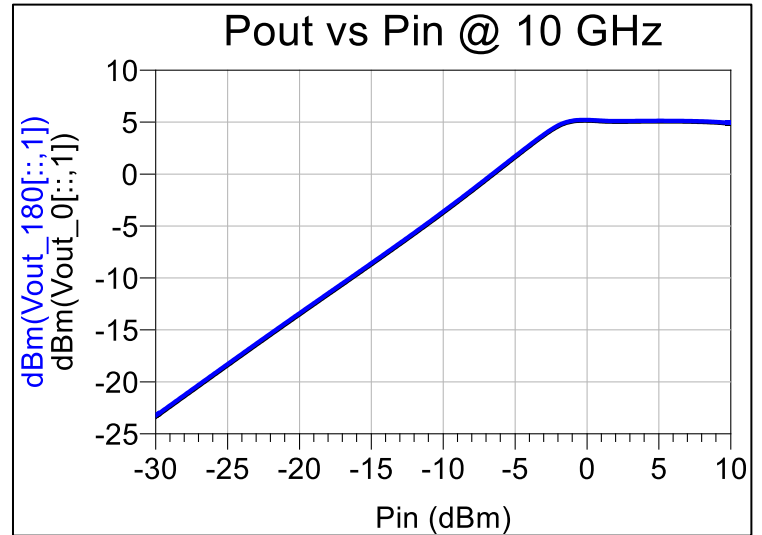
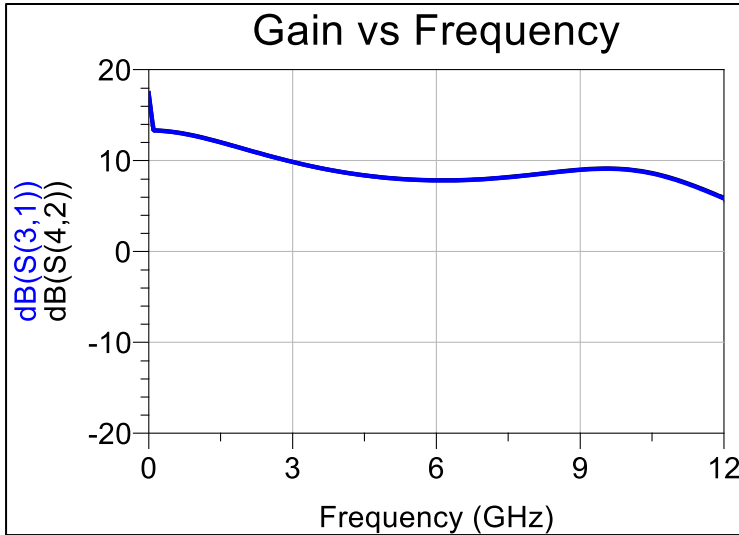
Differential Amplifier



PRE-RELEASE DATASHEET

RFDFA12

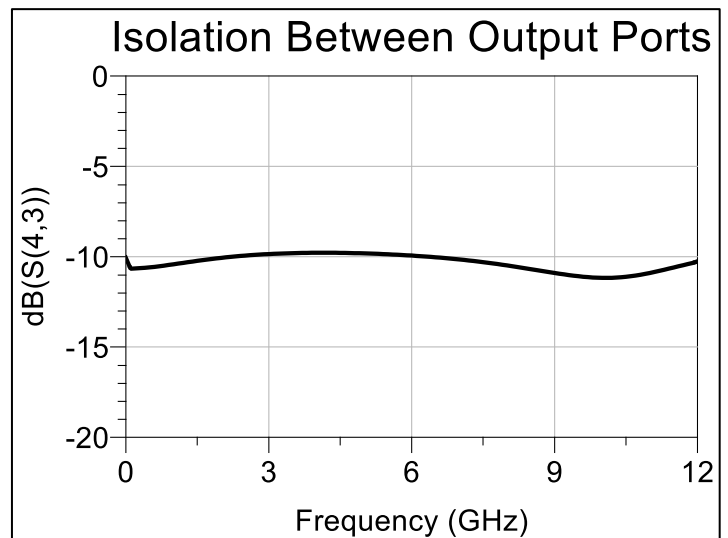
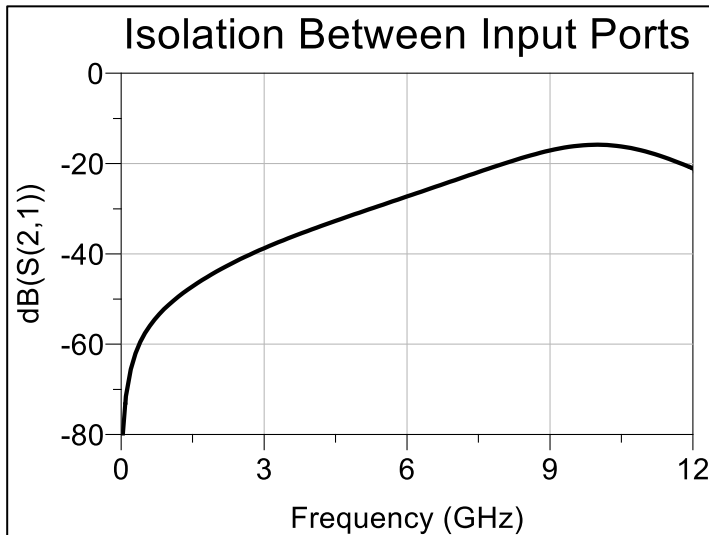
Typical Performance Curves:



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JUNE 2026



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